Remarks

Reconsideration of this Application is respectfully requested.

Claims 1, 5, 13, and 14 are sought to be amended. Claims 21-24 are sought to be added. Claims 1-24 are pending in the application, with 1, 14, 21, and 23 being the independent claims. No new matter has been entered by any amendments.

Based on the above amendment and following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Objection to the Claims

The Examiner objected to the claims 1, 5, and 13 as lacking antecedent basis for one or more elements and claim 4 as being dependent from both claims 1 and 3.

With regards to claim 4, the Applicants changed the dependency of claim 4 so that it depended from claim 1 and not claim 3 in the previous amendment (the number 3 in the previous amendment was crossed-out). Applicant respectfully requests that the Examiner reconsider and withdraw the objection.

As for the antecedent basis objections, Applicants disagree to with these objections. There are no antecedent basis problems in claims 1, 5, and 13. However, Applicants have made non-substantive changes to the claims, as suggested by the Examiner, in order to expedite prosecution. These changes do not narrow the claims, nor are they required for patentability, at least based on the Examiner objecting to and not rejecting the claims. Therefore, Applicants respectfully request that the Examiner reconsider and withdraw the objections.

Rejections under 35 U.S.C. § 102(e) and 103(a)

Claims 1, 2, 8, 12, 14-16, and 19 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,501,869 to Athale ("Athale"). Claims 3-7, 9-11, 13, 17, 18, and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Athale in

view of U.S. Patent No. 5,945,898 to Judy et al. ("Judy"). Applicants respectfully request that the Examiner reconsider and withdraw the rejections.

Claim 1 recites at least a device comprising a substrate, an optical input accepting the optical signals so that the optical signals travel substantially parallel to the substrate, a control device ... directing the optical signals substantially parallel to the substrate between the optical input and an optical output, and a channel located between the optical input and the optical output confining the optical signals to a pre-determined path.

Claim 14 recites at least a method comprising forming a reflective portion on a switching element coupled to a substrate ... and conducting an optical signal substantially parallel to the substrate through channels that confine the optical signal to predetermined paths.

Athale in FIG. 19, which was asserted by the Examiner as teaching the invention, includes a NxM cross connect optical switch that must have a first optical switch 1990 (e.g., a first substrate) and a second optical switch 1992 (e.g., a second substrate) in order to direct a light beam 1910 from a respective input 1910-1930 to a respective output 1940-1980. The light is directed along three optical paths from the input to the output. A first path (e.g., from 1910 to 1911) that is perpendicular to a second path (e.g., from 1911 to 1941) that is perpendicular to a third path (e.g., from 1941 to 1940).

Therefore, FIG. 19 of Athale, which was asserted by the Examiner, fails to teach of light traveling parallel to a substrate from an input to an output, as recited in claims 1 and 14.

Athale in FIG. 9 shows light traveling parallel to a free space optical switch 900. However, light beams are not confined to predetermine paths in FIG. 9. Athale teaches of not wanting to use this configuration, and problems associate therewith.

Judy does not cure these deficiencies because it merely teaches of a conventional switching element.

Therefore, Athale and Judy, either alone or in an asserted obvious combination, fail to teach or suggest at least: (1) light traveling through an optical switch parallel to a substrate and/or (2) light beams being confined to predetermined paths, as recited in claims 1 and 14. Accordingly, Applicants respectfully request the Examiner reconsider

and withdraw the rejections. Claims 2-13 and 15-20 should also be found allowable, at least based on their respective dependencies from claims 1 and 14.

New Claims 21-26

New claims 21 and 23 recite at least confining an optical signal to a predetermined path between an optical input and an optical output using a waveguide and directing the optical signal from the optical input to the optical output using a control device having a cantilever with a reflective portion, a permanent magnet, and a conductor that moves the control device between first and second positions each time energy passes through the conductor. None of the applied patents either alone or in combination teaches these features. Therefore, Applicants respectively request that the Examiner find claims 21 and 23, and all claims depending therefrom, claims 22 and 24, allowable over the applied patents.
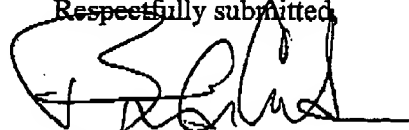
Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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